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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Fabio Perini

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EXAMINER

CORDRAY, DENNIS R

ART UNIT

PAPER NUMBER

1731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/630,962	PERINI, FABIO	
	Examiner	Art Unit	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,8,11,13,14,16-18,20,28 and 36-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,8,11,13,14,16-18,20,28 and 36-47 is/are rejected.
- 7) ☒ Claim(s) 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's amendments and arguments filed 12/12/2006 have overcome the previous rejections. Therefore, the rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made as detailed below.

Although Applicant's arguments regarding the prior art used are moot, some comments regarding the arguments are deemed necessary as applicable to the new rejections.

Applicant argues on pp 11-13 against the combination of Hietala et al with Danforth because 1) Hietala et al does not disclose suction and inlet ducts in horizontally spaced end walls; 2) Hietala et al does not disclose a suction pump that flows water along the bottom of the container; 3) the methods of operation of Danforth and Hietala et al are fundamentally different; 4) Hietala et al would not efficiently handle a large volume of paper; 5) Hietala et al does not describe a suction duct separated from spray nozzles; 6) it would be impractical to use the suction ducts of Hietala et al to transport entire broken paper sheets; 7) Hietala et al teaches a vacuum while Danforth operates a container at room pressure; and 8) Hietala et al recirculates water to the sprays rather than to a separate inlet.

The disclosures in a reference must be evaluated for what they would fairly teach one of ordinary skill in the art. In re Snow, 471 F.2d 1400, 176 USPQ 328 (CCPA 1973); In re Boe, 355 F.2d 961, 148 USPQ 507 (CCPA 1966). Specifically, in considering the teachings of a reference, it is proper to take into account not only the

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specific teachings of the reference, but also the inferences that one skilled in the art would reasonably have been expected to draw from the reference. In re Preda, 401 F.2d 825, 159 USPQ 342 (CCPA 1968); In re Shepard, 319 F.2d 194, 138 USPQ 148 (CCPA 1963). In addition, it is proper to take into consideration not only the teachings of the prior art, but also the level of ordinary skill in the art. In re Luck, 476 F.2d 650, 177 USPQ 523 (CCPA 1973). Specifically, those of ordinary skill in the art are presumed to have some knowledge of the art apart from what is expressly disclosed in the references. In re Jacoby, 309 F.2d 513, 135 USPQ 317 (CCPA 1962).

Hietala et al teaches the use of an air suction system to draw waste paper and dust into the pulper via entrainment and a separator to remove dust, paper pieces and water drops from the air flow prior to the exhaust fan. The reference provides a solution to the problem of directing materials into the pulper and keeping finer particulates from being discharged through the exhaust fan. Despite the different method of operation and possible different capacities of the disclosed pulpers, the principle of using a vacuum (less than atmospheric pressure) inside the pulper to aid the entry of waste paper into the pulper in addition to simply directing the paper to fall into the pulper would have been obvious to one of ordinary skill in the art in view of the teaching of Hietala et al to achieve more efficient processing of the paper. Recirculation of some of the pulp and water to maintain water level inside the pulper as taught by Hietala et al would also have been obvious to minimize use of fresh water. Hietala et al teaches the location of the stock showers in the outer collector portion of the pulper, while the cyclone is in the inner portion (p 182, "Integrated Double Separator and Pulper" section, 1st par) the

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interior of which is separated from the sprays by a wall (shown in Fig 1, p 183). Hietala et al also teaches that only part of the sprays are recycled while others are provided by fresh water (Fig 2, items 9, 10 and 11), thus the recycle inlets are separate from the fresh water spray nozzles. Differences in the physical placement of inlet and suction ducts, sprays and recirculation ducts for a longitudinally extending pulper versus the cylindrical pulper of Hietala et al would have been obvious to one of ordinary skill in the art.

In any case, the physical configuration of the pulper of Hietala et al is not as relevant as the problem-solving teachings gleaned from the disclosure. The problem-solving teachings of Hietala et al, as described above, are equally applicable in the current rejections, as detailed below.

Drawings

The drawings were received on 9/12/2005. These drawings are accepted.

Claim Objections

Claim 44 is objected to because of the following informalities: in line 10, the word "at" should be inserted between "arranged" and "said". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 2, 8, 11, 13-14, 16-18, 20, 28, 36-41 and 44-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 36 recites, in lines 13-15, a "water inlet duct feeding water into said container" and "said water inlet duct, said water suction duct and said pump generating a water flow along said bottom wall of said ... container". Claim 44 recites in lines 9-13 "a suction duct", "an inlet duct" and "a suction pump flowing a fluid along said bottom wall of said container from said inlet duct to said suction duct." The application as originally filed only discloses the water inlet duct as a part of a recirculation system. The newly presented claims recite the inlet duct without the recirculation system, thus expand the scope of the claims beyond that originally disclosed and present new matter.

Claim 44 recites "a suction pump connected to one of said suction duct and said inlet duct" in line 11. The originally filed application teaches that the chopper pump (suction pump) is connected to a delivery duct that has a branched recirculation duct, the branched duct emerging inside the container (p 9, lines 4-7). The branched recirculation duct forms the now-claimed inlet duct, thus is not connected to the suction pump.

Claim 44 recites "flowing a fluid along said bottom wall of said container" in line 12. Claim 45 recites "'fluid" in line 2. Claim 2 recites "jets of fluid" in line 5. The application as originally filed specifies water rather than a fluid. The recitation of a "fluid" expands the scope of the original invention and thus presents new matter.

Claims 2, 8, 11, 13-14, 16-18, 20, 28, 37-41 and 46-47 ultimately depend from and inherit the expanded limitations of Claims 36 and 44, thus also present new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 11, 13-14, 16-18, 20, 28, 42 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "the air flow" in 44. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites "a mixture of water and waste sucked by said suction pump". Claim 18 depends from Claim 44, which recites only that the suction pump flows a fluid. It is not clear from the claims whether the fluid is a mixture of water and waste or whether the fluid is separate from the water and waste.

Claim 39 recites "an inclined surface extending between said first end wall and said second end wall." Claim 41 recites "said bottom wall of said container is inclined downward from said water inlet duct towards said water suction duct." Since the water inlet duct and water suction duct are located at the first and second end walls, the

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inclined bottom wall extends between the two end walls and it is not clear if the inclined surface of Claim 39 is the same as the inclined bottom wall of Claim 41. Both claims (39 and 41) depend ultimately from Claim 36. Similar confusion arises between Claim 46, which recites an inclined surface, and Claim 14, which recites an inclined bottom wall. Both claims (14 and 46) depend from Claim 44.

Claim 42 recites the limitation in line 12 of "said first pump" in an earlier portion of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 42 recites "said suction duct" in lines 12 and 14, apparently in reference to "a water suction duct" recited in line 11. Claim 42 also recites "said suction-duct" in lines 16 and 18, apparently in reference to "an air suction duct" recited in line 15. The reference to a water suction duct and an air suction duct by similar names (suction duct or suction-duct) is confusing and makes the claims indefinite in scope.

Claim 43 recites "said suction duct" in Claim 42. It is not clear whether the suction duct is the air suction duct or the water suction duct.

Claim 44 recites in lines 9 and 10 "a suction duct" and "an inlet duct", but fails to define either as being for air or water. Claim 11, which depends from Claim 44 recites "said recirculation duct guiding a part of the flow sucked in by the suction pump to said inlet duct"; Claims 13 and 14, which depend from Claim 11, refer to "said suction duct". Claim 16, which depends from Claim 44, recites an inclined surface and "said suction duct having suction openings arranged underneath said inclined surface"; Claim 17, which also depends from Claim 44, refers to "said suction duct." The Examiner understands Claims 11, 13 and 14 to refer to a water suction duct, and Claims 16 and

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17 to refer to an air suction duct, yet each claims recite either "said inlet duct" or "said suction duct". The Examiner also understands that the container has a water suction duct and an air suction duct. However, it is not clear from Claims 44, 11, 13-14 and 16-17, whether water ducts or air ducts are being claimed.

Furthermore Claim 17 recites that "said suction duct is connected to a separator for separating air from solid and/or liquid particles entrained in the air flow," while Claim 44, from which Claim 17 depends, recites a suction pump connected to the suction duct and causing a fluid to flow along the bottom wall of the container. The relationship of the suction pump, separator and suction duct is not clear. The relationship of the fluid flow and air flow is also not clear.

Claim 47 recites "said separating baffle defining openings" in line 4. It is not clear how the separating baffle defines openings. The Specification recites on p 10, lines 7-8 that the separating baffle defines a closed volume and that the baffle has suction openings.

Claims 2, 8, 20, 28 and 45 ultimately depend from and thus inherit the indefiniteness of Claim 44.

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Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8, 13-14, 16, 36, 41 and 43-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Stark (2696766).

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Claims 8, 36 and 43-45: Stark discloses a pulper device for waste paper material (col 1, lines 17-21) comprising:

- A longitudinally extending container (tub) for collecting waste (col 1, lines 75-80; col 2, lines 33-56, Fig. 1) having first and second horizontally spaced apart end walls (Fig 1, items 13 and 14). The container has an upwardly oriented inlet opening (slot) for the waste that extends essentially between the two end walls (Fig 1, item 57, col 4, lines 6-9). The slot is of sufficient length to receive the entire width of the web,
- A first and a second set of pressurized nozzles arranged in spaced apart relationship along a longitudinal extension of the container and between the end walls (Fig 1, item 62, col 4, lines 26-30; Fig 4, items 62 and 67, col 4, lines 45-47),
- A water suction duct (outlet) arranged at one end wall (Fig. 1, item 41, col 3, lines 53-57) connected to a suitable pump (suction pump) for removing the pulped stock (water and waste),
- A water inlet nozzle (duct) (Fig 2, item 67, col 4, lines 46-48) for letting water into the tub, arranged at the opposite end of the tub. The outlet and pump remove water and waste from the tub; the inlet admits water into the tub. The net result of the removal action of the pump generates a net flow of water and waste along the bottom wall of the tub from the inlet end to the outlet end.

Claims 13, 14 and 41: The bottom wall of the tub is sloped downward from end having the inlet discussed above to the end having the outlet (Fig 3, item 10, col 2, lines

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48-51). Since the outlet is at the lowest point of the tub, the inlet (duct) must inherently be higher than the outlet (suction duct).

Claim 16: The bottom wall of the tub forms an inclined surface extending between the two end walls. The outlet (suction duct) is in an area recessed below the bottom wall (Figs 1 and 3, item 40, col 3, lines 49-57), thus has a suction opening below the inclined bottom of the tub.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark.

The water jets discharged by the nozzles slit the web into strips (col 4, lines 30-34; col 4, line 84 to col 5, line 2).

Stark does not disclose that the trajectories of the water jets intersect. Since the jets are pressurized high speed jets (col 4, line 32) and shoot in horizontally, it would have been obvious to one of ordinary skill in the art that their trajectories intersect. Although some of the actual sprays may not intersect due to the elongated midfeather wall (Figs 1 and 2, item 16), the array of spray nozzles extends beyond the ends of the midfeather wall (Fig 2, items 62 and 67) and the uninterrupted sprays intersect.

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Claims 28 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Vaughan (3973866).

Stark does not disclose a chopper pump for water and waste removal.

Vaughan discloses a centrifugal chopping slurry pump (chopper pump) that chops and slices waste materials that tend to obstruct flow. The pump is useful for wood and papermaking pulps. Vaughan teaches that the chopper pump is capable of pumping thick slurries without clogging or losing its prime and without the slurry being dewatered (col 1, lines 6-8, 21-29 and 47-50)

The art of Stark, Vaughan and the instant invention addresses the same problem of pumping a thick slurry that is difficult to pump using conventional pumps. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a chopper pump to remove the water and waste of Stark in view of Vaughan as a pump known to be effective for pumping thick slurries without clogging or losing its prime and without the slurry being dewatered.

Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Heiskanen et al (EP 1010804 A1).

Stark does not disclose thickening the water and waste removed from the tub.

Heiskanen et al disclose a method for treating broke by repulping and returning it to the papermaking machine. The broke is repulped, taken to a press (thickening station) to thicken it to higher consistency by eliminating part of the water content thereof, then stored in a storage tank to meter back to the machine (col 1, par 1; col 4,

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par 14). The filtrate from the press is recycled to dilution liquid in the fiberizer (cols 5-6, par 17).

The art of Stark, Heiskanen et al and the instant invention is analogous as pertaining to repulping broke. It would have been obvious to one of ordinary skill in the art at the time of the invention to thicken the pulped material to minimize storage volume required and to reuse the pulped material in a papermaking machine in the process of Stark in view of Heiskanen et al as an efficient and environmentally friendly use of the material. Returning the thickened pulp to the papermaking machine would obviously involve conveying it to the headbox in a standard papermaking process. It would also have been obvious to recycle the press filtrate to minimize the use of fresh water.

Claims 11, 38-40, 42 and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Hietala et al (Arto Hietala and Noel Kuck, "Flakt Trimco Trim-conveying System", TAPPI 90 Proc. (Atlanta), Mar. 5-8, 1990, pp. 181-184).

Hietala et al discloses a pulper device for waste paper material (pg. 181, col. 1, "Abstract", lines 1-9) comprising a container (Fig. 2, item 5, p 184) for collecting said waste, having an inlet opening for said waste (pg. 182, col. 1, "Integrated Double Separator and Pulper" section, par 1); at least one water nozzle which produces a jet of water which intercepts the waste which falls into said container (Fig. 1, top right of figure, p 183); a first pump (suction pump) (Fig. 2, item 13) which removes the water and the waste from said container; and a suction duct connected to said container and

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which sucks air from inside said container (Fig. 2, items 1 and 2). The exhaust fan for the air suction system is placed after a cyclone separator and serves to pull trim from several winders into the pulper (p 181, "The Exhaust Fan" section, par 1). The cyclone separator separates entrained paper dust, small paper pieces, fiber bundles and water drops from the air flow through the fan (p 182 last par, left col).

Hietala et al discloses a pulp recirculation duct (Fig 2, item 9) between the first pump and an inlet spray of stock at the top of the pulper, the recirculation amount adjusted to the liquid level in the pulper (p 182, "Integrated Double Separator and Pulper" section, 2nd par).

The art of Stark, Hietala et al and the instant invention is analogous as pertaining to the repulping of waste from a papermaking process. Hietala et al provides a solution to the problems of maintaining liquid level inside of the pulper and enhancing the flow of waste paper and dust into the pulper. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use an air suction duct in the pulper of Stark in view of Hietala et al to maintain a vacuum inside the pulper to pull waste paper and dust into the pulper. It would further have been obvious to treat the air flow using a separator to remove solid and liquid particles to prevent dust and moisture from spreading into the machine hall (pg. 183, col. 1, "Conclusions" section, ¶ 3). It would also have been obvious to use a controllable recirculation of pulp into the pulper to maintain the consistency and liquid level with minimal usage of fresh water.

Regarding Claims 38-40 and 42, it would have been obvious to one of ordinary skill in the art to place the air suction duct above the water inlet and outlet levels to

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avoid sucking water into the separator. Since the array of spray nozzles extend longitudinally between the end walls, it would also have been obvious to separate the air suction duct from the spray nozzles by a wall or barrier extending longitudinally between the end walls to keep water from the spray from being immediately sucked into the air suction duct. Placing the air suction duct beneath the wall and the spray nozzles above would have been obvious to facilitate pulling the waste paper into the pulper. It would further have been obvious to incline the separating wall so as to direct spray water and waste paper into the pulper rather than trap it on a horizontal surface. It would have been obvious to provide a baffle creating an enclosed space separating the air suction duct from the interior space of the pulper to prevent large waste paper pieces from being sucked into the duct, the baffle having holes for drawing air into the area of the air suction duct (fluid communication).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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DRC

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